Messages from last night

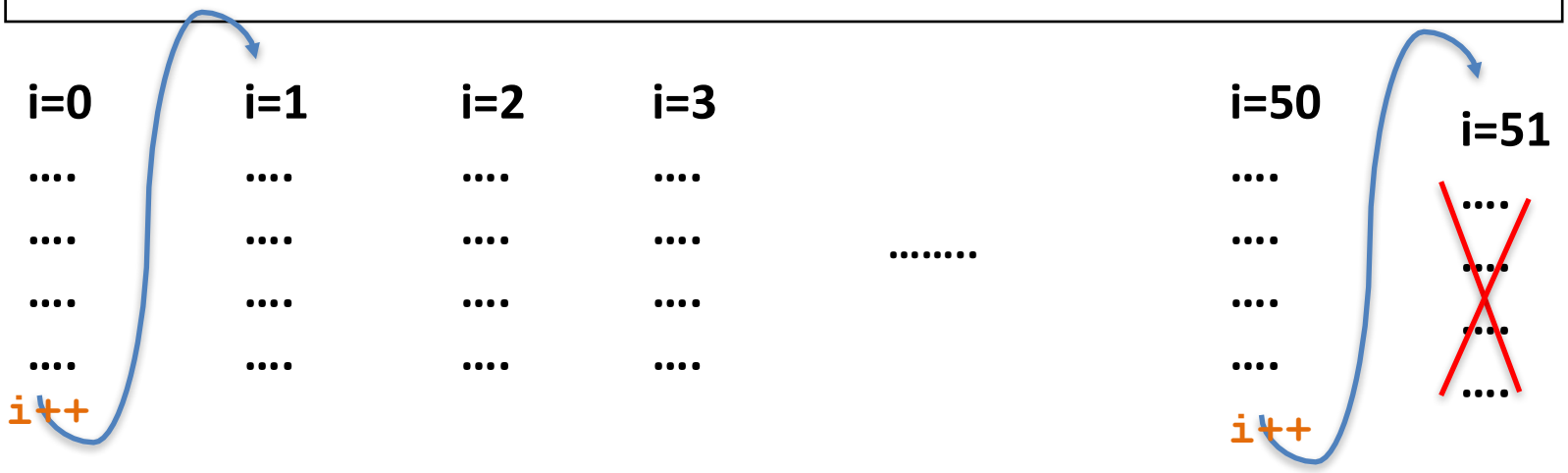
- Developing good habits for team work, no woman is an island

- Writing readable code with proper style
  - Java's popularity, Hazelcast's success relies on easy re-usability

- A lot of practice (i.e. doing bonus projects) in programming

```
for ( init ; test ; step ) {
    statements to be repeated
}
```

```
for (int i = 0; i <= 50; i++)
```



What is the value of i after the for loop?

Sorry, i is dead ☹

Exercise: Reading `for` Statements

Describe the effect of each of the following `for` statements:

1.
```
for (int i = 1; i <= 10; i++)
```

2.
```
for (int i = 0; i < N; i++)
```

3.
```
for (int n = 99; n >= 1; n = n - 2)
```

4.
```
for (int x = 1; x <= 1024; x = x * 2)
```

Keep The Balance:

I have a factory that runs with 100 people. Some people get paid 500 units/month, some 100 units/month, and some 5 units/month.
I pay 10000 units/month to my workers.

How many of the 100 receive 5 units/month?

Could you help me with a Java program?

Comparing `for` and `while`

The `for` statement

```
for ( init ; test ; step ) {
    statements to be repeated
}
```

is functionally equivalent to the following code using `while`:

```
init;
while ( test ) {
    statements to be repeated
    step;
}
```

The `if` Statement

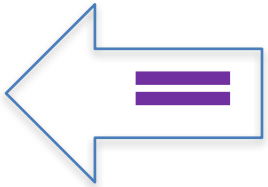
```
if (condition) {
    statements to be executed if the condition is true
}
```

```
if (condition) {
    statements to be executed if the condition is true
} else {
    statements to be executed if the condition is false
}
```

We don't write a condition there, the condition is just the inverse of the if condition

Declaration, assignment, update

```
{
....
int x = 5;
```



5

```
....
int x = 7;
....
}
```

Sorry, x exists, you cannot re-create it before it dies. Cloning not allowed!

Declaration, assignment, update

```
{
....
int x = 5;
```

```
....
x +2;
....

}
```

Let's grow x

No error, but it does not update x! it computes value of x+2 and forgets it.

Declaration, assignment, update

```
{
....
int x = 5;
```

```
....
x=x +2;
....
}
```

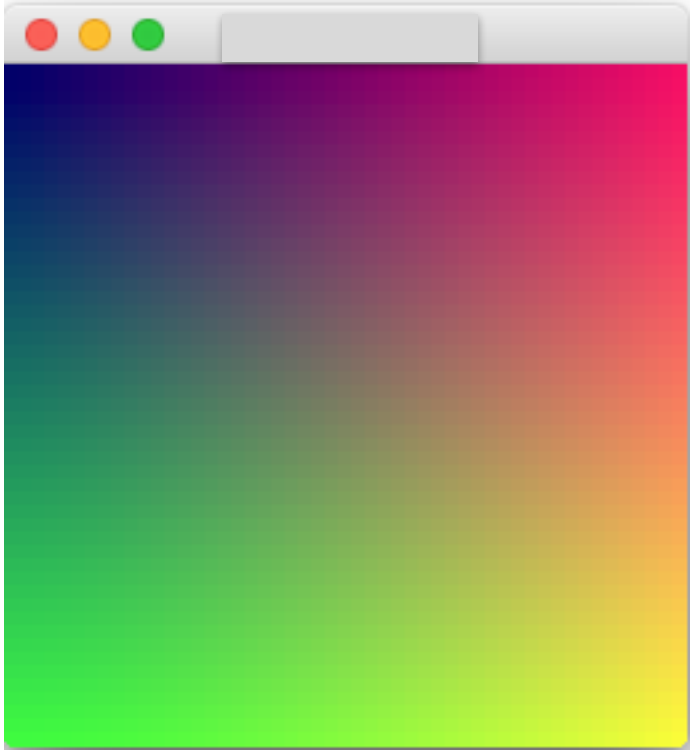
Let's grow x

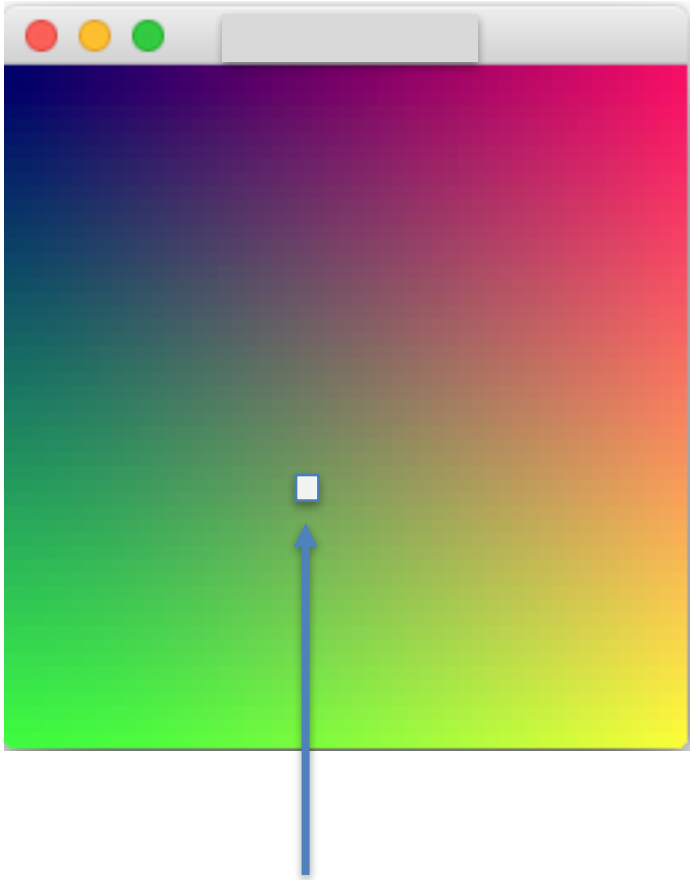
Good! After this line x indeed has a value of the previous value + 2

In Java = is not a mathematical equality operator, it is an assignment operator

Methods returning objects

Color Spectrum





```
private GRect getColoredSquare(int red,int green, int blue) {
        GRect square=new GRect(STEP,STEP);
        Color newColor=new Color(red%256,green%256,blue%256);
        square.setColor(newColor);
        square.setFilled(true);
        return square;
    }
```

The output is a colored rectangle

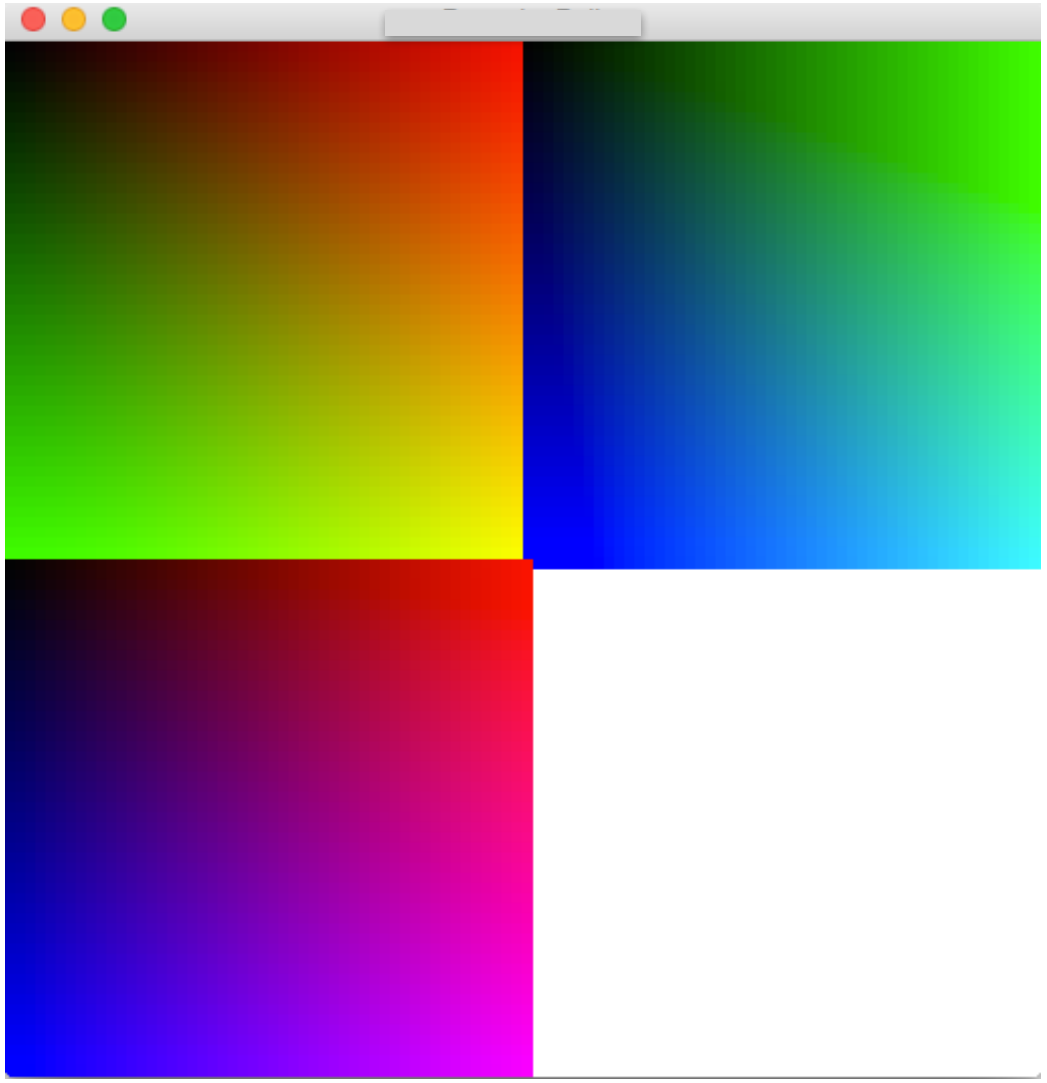
```
public class Spectrum extends GraphicsProgram {

    public static final int APPLICATION_WIDTH = 256;
    public static final int APPLICATION_HEIGHT = 256;
    public static final int STEP = 5;

    public void run() {
        for(int x=0;x<getWidth();x=x+STEP) {
            for(int y=0;y<getWidth();y=y+STEP) {
                GRect point=getColoredSquare(x,y, 100);
                add(point,x,y);
            }
        }
    }

    private GRect getColoredSquare(int red,int green, int blue) {
        GRect square=new GRect(STEP,STEP);
        Color newColor=new Color(red%256,green%256,blue%256);
        square.setColor(newColor);
        square.setFilled(true);
        return square;
    }
}
```

Methods calling other methods



Projects

Make Your Own - Written by You

Before you get started you must have your idea approved by one of the teachers! Think of a few, incase one is too hard or too easy.

http://cs106a.stanford.edu

CS 106A: Programming Methodology

Summer 2018

Monday, Tuesday, Wednesday, Thursday 11:30AM-12:20PM PST in NVIDIA Auditorium

RESOURCES

- Lecture Videos
- Eclipse
- Course Staff
- Textbooks
- Pair Programming
- Stanford Library Docs
- Blank Karel Project
- Blank Java Project

EXAMS

Midterm
Monday, July 23
7-9PM PST

Final
Friday, August 17
12:15-3:15PM PST

NEW ANNOUNCEMENTS

Assignment 1: Karel the Robot

2 days ago

For your first assignment, you will write a series of Karel the Robot programs. See the assignment page for more details. The assignment is due **Thursday, July 5th**, but make sure to get started early. Though Karel is a fun, simple robot, some of the questions can be tricky!

Section Assignments + Late Section Signups

2 days ago

Regular section signups have concluded, and we have finalized section assignments. You can find your assigned section here.

If you missed regular section signups, you may sign up using the late signup form in the "Section" dropdown at the top. Any SCPD students who missed the opportunity to sign up for a grader should do so also via the "Section" dropdown at the top.

CS 106A 2017 video lectures

CS 106A 2008 video lectures

https://sites.google.com/a/ku.edu.tr/comp130/

KOÇ UNIVERSITY My.KU

COMP130/131

Search this site

Navigation

- Summer 2018
- Archive
  - Fall 2012
  - Fall 2013
  - Fall 2014
  - Fall2015
  - Fall2016
  - Fall 2017
  - Spring 2012
  - Spring 2013
  - Spring 2014
  - Spring2015
  - Spring2016
  - Spring 2017
  - Spring 2018
  - Summer 2015
  - Summer2016
  - Summer 2017
- Help files and videos
- Links
- Syllabus
- FAQ
- Sitemap

Summer 2018

Subscribe to posts

2) Expressions and Control Statements

posted Oct 10, 2016, 8:50 AM by BEKIR BERKER TURKER

- **Presentations:**
- 05-Expressions.ppt: Java Expressions (Variables and Arithmetic), ConsoleProgram (readInt, readDouble, println)
- 06-ControlStatements.ppt: Java expressions, control statements
- 07-Methods.ppt : User defined methods

- **Projects considered in lectures:**
- LEC05.zip, LEC05Solutions.zip: AddNIntegers, DistanceConverter, InterestCalculator
- LEC06.zip, LEC06Solutions.zip: DigitSum, LeapYear, LetterGrade, KeepTheBalance
- LEC07.zip, LEC07Solutions.zip: DaysInMonths, PrimeNumbers
- LEC08.zip, LEC08Solutions.zip: CelciusToFahrenheit, Combinations, MinimumMaximum, MonthName, Quadratic

- **Projects considered in discussion sessions:**
- DS projects_expressions, DS solutions_expressions: 1) RectangleArea, 2) TenthPower, 3) AverageGrades, 4) BottlesOfBeer, 5) PIExpansion